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A

HISTORICAL ACCOUNT  
OF  
BILLS OF MORTALITY,  
AND THE  
PROBABILITY OF HUMAN LIFE,  
IN  
GLASGOW AND OTHER LARGE TOWNS.

BY

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“ An active and industrious population is the stay and support of every well governed community.”  
COLQUHOUN.

“ The population of a kingdom does not exceed the stock of a kingdom, which should maintain them; neither is the population to be reckoned only by number; for a smaller number, that spend more and earn less, do wear out an estate sooner than a greater number that live lower and gather more.”—BACON.

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## BILLS OF MORTALITY.

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### A HISTORICAL ACCOUNT OF BILLS OF MORTALITY AND THE PROBABILITY OF HUMAN LIFE IN GLASGOW, AND OTHER LARGE TOWNS.

BILLS of Mortality are understood to contain a List of Births, Marriages, and Burials, taken from parochial Registers, at stated periods. When the Registers are accurately kept, and the various enumerations methodically arranged, in connexion with the classified population of a place, data are produced, from which the political economist may draw beneficial results.

The keeping of Parish Registers commenced in England in the year 1538, in consequence of an injunction issued in that year by Thomas Cromwell, who after the abolition of the Pope's authority in this kingdom in the reign of Henry VIII., had been appointed the King's Vicegerent in ecclesiastical affairs.

About the beginning of the seventeenth century, such registers appear to have been established in most parts of Europe; but it was not until the year 1662 that they began to attract public notice, and to be considered as the sources of valuable and interesting information. In that year John Graunt, a citizen of London, published his *Natural and Political Observations on Bills of Mortality*. The London Bills, or accounts of Baptisms and Burials, appear to have been occasioned by the plague, and to have been begun in the year 1592, a time of great mortality. They were afterwards discontinued, but were resumed in 1603, after the great plague of that year. They have ever since been continued weekly, and an annual Bill also has been regularly published. In 1629, the number of deaths by the different diseases\* and casualties was first inserted in them; also the distinction of the sexes, and these have continued ever since. But it is in the totals only of the Baptisms and Burials that the sexes are distinguished in these Bills; they do not show how many of each sex died of each disease; neither have they since 1728, when the distinction of the ages of the dead was first introduced, shown how many of each sex died in each interval of age, but only the total number of both sexes.

Although Mr. (afterwards Major) Graunt's book had but few attractions for the generality even of reading men, who cannot endure the fatigue of thinking closely for any length of time, yet by showing the usefulness of Parochial Registers, and Bills of Mortality, he contributed to form a taste for those inquiries among thinking men, and

\* The publication of a partial list of diseases, in such a population as Glasgow, is worse than useless. It is well known to the medical profession, and to the statist, that it cannot lead to any beneficial results; and it is evident that general lists of diseases cannot be procured without compulsory enactment

consequently to improve both the Registers and the Bills derived from them ; so that from his time the subject has been continually cultivated more and more. Parish Registers in some parts of the continent of Europe are now kept with more care than formerly, and a succession of works of considerable merit has been published on the subject, containing an important part of the natural and political history of our species, and affording valuable matter for the science of political economy. As the ages at which the deaths took place were not inserted in the London Bills till 1728, Major Graunt could not avail himself of that important information, but made a fruitless attempt to determine the law of Mortality without it.

The Breslaw Bills appear to have been the first wherein the ages at which the deaths took place were inserted, and the most important information which Bills of Mortality can afford was first drawn from them by Dr. Halley, who, in 1692, constructed a Table of Mortality for Breslaw from those Bills for the five preceding years.

In 1771, the first edition of Dr. Price's Observations on Reversionary Payments made its appearance, containing observations on the expectations of lives, the increase of mankind, the number of inhabitants in London, and the influence of great towns on health and population. This work added greatly to the information already before the public, connected with Bills of Mortality.

In 1774-5, Dr. Haygarth of Chester wrote two valuable papers, wherein he gave Bills of Mortality for that city, in a form calculated to exhibit at one view the most useful and interesting information respecting population. About the same time Dr. Perceval produced a paper respecting the population of Manchester.

During a period of nine years, commencing with 1779 and ending with 1787, Dr. Heysham of Carlisle kept accurate Registers of the Births and of the Deaths at all ages, in the two parishes of that city and environs ; also the diseases and casualties which the deaths at each age were occasioned by ; and the sexes were in all cases distinguished. These excellent Registers were kept with great care and skill, on the plan of Dr. Haygarth, above-mentioned, and included all dissenters within the two parishes. Dr. Heysham published them from year to year, as they were made, and accompanied them with valuable observations on the diseases of each year. The value of these bills was greatly enhanced by two enumerations of the people within the two parishes, the one made in January 1780, the other in December 1787, in both of which the ages were distinguished, but not the sexes of each age, though the totals of each sex were. These documents, printed in convenient forms, may be found in Milne's Treatise on Annuities.

The Mortality Bills of Breslaw, Chester, and Carlisle, seem to have been drawn up with much care, but no reliance whatever can be placed on the London Bills. This has been long known to the political inquirer, and latterly to the public through the medium of the Report of the Select Committee on Parochial Registration, containing the minutes of evidence ordered to be printed by the House of Commons on 15th August, 1833. The following is an abstract of the evidence of some of the witnesses.

JOHN TILLY WHEELER, ESQ., CLERK TO THE WORSHIPFUL COMPANY OF PARISH CLERKS IN THE CITY OF LONDON.

This Company is of old standing, having been first incorporated by 17th Henry III., in 1233. The next charter was the 4th of James I.; the next 11th Charles I.; and the last was in the 14th of that reign. The Company has the exclusive privilege of issuing the Bills of Mortality for London, including the 17 parishes in the liberties of the city without the walls, the parishes in the borough of Southwark, and 24 parishes in

Middlesex and Surrey. As to the registration of Births, children who are half baptized, i. e. children who are baptized without sponsors, are not registered. These may amount to about one in ten. Great numbers of children are never brought to be registered. As to burials, there is an act of parliament which makes it imperative on church wardens to appoint two searchers in each of the parishes within the Bills of Mortality. The office of searcher is confided to two old women, generally paupers, who are legally entitled to ask a fee of 4d. and on their hearing from the parish clerk that there has been a death in any house, they go and demand a sight of the body. Being very needy people, they are open of course to any fee that may be given them to dispense with their office altogether. Instead of 4d. if they get one shilling, or half-a-crown, they go away without looking at the body. Indeed they are perfectly inadequate to the purpose, and no reliance can be placed on them or their reports of diseases by which persons die. From the circumstance of there being only 26,974 christenings registered in 1832, and 28,606 burials, while the population is increasing, there must be great inaccuracy in the Bills, and moreover there are no burials registered, which do not take place in churches or churchyards. Besides all this, there have been no returns from the parish of St. George's and others for seven or eight years.

DR. JAMES MOORE, VICAR OF ST. PANCRAS,

In answer to the question respecting an account of the diseases of which people die, said, there would be great objections taken to that. Many families lose their friends from diseases they would not like to have publicly proclaimed, such as insanity, and various scrofulous affections. This is a thing not to be desired. A mother would not like a strange person to go and inspect the body of her deceased child.

GEORGE MANN BURROWS, ESQ., M.D. FORMERLY EDITOR OF THE LONDON  
MEDICAL REPOSITORY,

Was in the habit of receiving weekly Bills of Mortality, and registers of diseases from medical practitioners in the different districts of the metropolis. These he published monthly in the form of a table, showing the diseases prevalent in the eleven different districts into which he divided London. About the end of the year 1817, he observed some very considerable error in the weekly Bills of Mortality. In the parish of St. George, Middlesex, the deaths of the year were entered as the deaths of the week. Dr. Burrows recommended that the office of searcher should be abolished, and that the diseases by which persons die, should be attested by the medical practitioners who attended the deceased. Or if no medical practitioner, the death should be attested by some other appointed for that purpose, who upon view of the body, should certify the disease to the best of his knowledge. As editor of the Medical Repository, Dr. Burrows had foreign journals from France, Germany, and Italy, constantly before him, and knew that in every state in Europe, excepting Spain and Portugal, there are very complete registers, and that with the above exception, the system in Britain is by far the most imperfect in Europe. In Germany and Sweden, the registers are very complete.

JOHN SOUTHERNDEN BURN, ESQ., AUTHOR OF THE HISTORY OF PAROCHIAL  
REGISTERS IN ENGLAND,

Stated that there was no registry for any person except those who comply with the



rules of the Church of England. If the diseases by which persons die, were inserted on the information of medical men, it might be useful. The present returns of the searchers are not at all to be depended on.

EDGAR TAYLOR, ESQ., F.R.S.,

Said that in consequence of the incorrectness of the registers, all statistical calculations drawn from the imperfect number of Births and Deaths, as evinced by these returns, must be very fallacious. He did not see how they can be otherwise. The practical details of keeping up, collecting and preparing the registers in the parishes to the extent and in the form in which they are at present, are by no means creditable to the country.

J. W. LUBBOCK, ESQ., F.R.S.,

Stated that in the preparation of his several philosophical publications, he had attended to the Censuses which had been periodically framed in England, and to the different documents in which calculations as to the movement on which population depends, but could not derive the information from the perusal of the parochial registers. In the first place he apprehends that the ages at which people die, are not given with sufficient accuracy, next that the baptismal register is not a register of Births, but only that of christenings, which often take place a considerable time after the birth, which of course leads to considerable errors. He never found any person that could form an idea of what was the mean time that a christening followed the Birth. Another point to which his attention was drawn, was with regard to the Births and Deaths in different months in the year. He endeavoured to ascertain what took place in the metropolis from the Bills of Mortality, but he found it next to impossible to obtain any thing like an accurate statement, from the circumstance that the parish clerks are not in the habit of regularly returning burials and christenings when they take place. In several parishes, there were perhaps not above one in a month, and all of a sudden 100 were reported.

The imperfect system of the Bills of Mortality extends to some of the provincial towns; he had seen printed Bills at Northampton, and understood that they have been seen at Norwich and other places. From his intercourse with learned and scientific men in different parts of Europe, he is satisfied that the present system is in truth inferior to that of any other country in Europe. In France and Belgium, the system of registration approaches nearly to perfection. A compulsory registration of Births and Deaths would be desirable as a national object. In the first place, the interests of the child would be provided for, even in cases where the parents do not sufficiently consider it, and it is impossible to say what importance it may be to any child in after life, to recur to the register of his birth.

JOHN FINLAISON ESQ., ACTUARY OF THE NATIONAL DEBT OFFICE,

Stated that the evils which result from the want of a correct system of registry of births and deaths, in so far as respects that branch of science with which he was conversant, were very great. The non-existence of such a registry renders it impossible (although on many occasions it particularly concerns the public interests) to determine what may be the law of mortality now actually prevailing among the working classes in this empire, either generally or locally. On the subject of the law of mortality he begged to remark,

that various observations on the duration of life in different parts of England have hitherto been prepared, upon which tables of the value of annuities and of insurances on lives have been constructed. In a report which he submitted to the Treasury, and which was ordered to be printed by the House of Commons, on 31st March, 1829, he demonstrated the impossibility that any faith whatever could be put in Bills of Mortality, as they are now prepared, for such a purpose. In order to procure an approximation to the rate of mortality which prevails among the working classes in this country, he resorted to the public register at Ostend, in Flanders, where he made an observation on the mortality of that town, for a period of twenty-six years, ending at January, 1832. The registers of births and burials, at Ostend, are drawn up with extreme precision, and the system is precisely the same as that which prevails in France. From these registers he was enabled to determine that Ostend is, notwithstanding the opinion that prevails in England, a very healthy situation, and, no doubt, is equal to the average of England. At least, the only knowledge of the law of mortality, as prevailing among the lower classes in England, on which he was able to depend, is derived from that which he obtained in Flanders. Mr. Finlaison farther stated, that from the mode in which the registers are kept at Ostend, he was enabled to determine the expectation of life and the values of annuities and of life insurance for each sex, and at every age, from the birth. He also found that the mortality upon the whole population, which consists of about 11,000 souls, was annually at the rate of one death in 36½, or eight deaths for every 289 of the population. In this country it is gravely stated, even in Parliament, that the rate of mortality is, in some counties, only one in 65, or eight in 520, a manifest impossibility; because, if only one in 65 die in a year, the mean duration of life of an infant, newly-born, is 64½ years, therefore the extreme of life must be near 130 years of age; but the general mean duration of life in England does not, in fact, exceed 36 years. He was enabled also to determine the rate of mortality in early infancy, a thing totally unknown in this country. The extracts prepared for him by the town clerk gave the deaths at each month in the first year of infancy, and at each three months in the second year, from which he was enabled to deduce a curious fact, that in Flanders, in both sexes collectively, of all the children born, a number rather less than one-fifth die in the first year; one quarter, exactly, of the number who so die, expire in the first month. As to any thing like an account of the disease by which death is occasioned, he thought that branch of inquiry is out of the question. At any rate, as the laws of population and mortality depend upon masses and not particular cases, whatever utility may result from a registry of disease, the object of the calculation may, for the most part, be attained without it tolerably well. The rate of mortality in any country may be estimated locally or generally, but in both cases it is necessary to have the number existing at each age of the living population on a particular date, either at the commencement of the period embraced by the observation, or at the termination thereof, and it would certainly be far better if it could be obtained at both, but with one such census in addition to the total number of deaths at every age, and the total number of births within that period, the observation can be made with tolerable accuracy. Were such a registry kept for a considerable number of years, the population could be determined with accuracy from the results preserved by the register, far better than by any census. The registry on the Continent is absolutely perfect for most purposes, whereas the system pursued in this country is, in a great measure, totally useless.

#### GLASGOW BILLS OF MORTALITY.

As the Glasgow Bills of Mortality, from which the probability of human life in large

towns, and other important results may be deduced, have met with more than ordinary approbation from political inquirers, I think it right to give a detailed account of the manner in which those Bills have been prepared: and aware that the parochial register of births was defective, I obtained the necessary information in the following manner:

#### CONCERNING THE REGISTRY OF BIRTHS.

On the 6th of December, 1829, I addressed a letter to each of the seventy-five clergymen and lay pastors in the City and Suburbs, who baptize children, requesting to be favoured with returns of the number they might baptize from the 14th December, 1829, to 15th December, 1830, both days inclusive, being the year previous to the last government Census. The letter was accompanied by a book in which the sexes and the particular parishes in which the parents resided were to be inserted. I also requested the various Societies of Baptists, the Society of Friends, and Jews, and others who do not dispense the ordinance of baptism to infants, to favour me with the above particulars relative to children born to members of their societies, and in due time I had the satisfaction of receiving returns from the *whole*, as also an account of the children of parents, who, while disapproving of infant baptism, did not belong to any religious society. From these returns it appeared that in the City and Suburbs there were 6397 children baptized, or born to Baptists, &c., and of that number there were only 3225 registered, leaving unregistered 3172. It is therefore evident that the baptismal register is of no use in a statistical point of view.

#### CONCERNING THE REGISTRY OF MARRIAGES.

Although in Scotland there is no marriage act restricting the solemnization of marriage to clergymen of the Established Church, the ordinance can only be regularly celebrated by persons duly called to the pastoral office, and not until a certificate of the proclamation of banns has been produced. Persons irregularly married are deprived of the privileges of the church till they appear before the Kirk Session, acknowledge their fault and be reponed. From this circumstance, in connexion with the solicitude of the female and her friends to have the marriage registered, the Marriage Register of Glasgow and its Suburbs may be held as correct for all statistical purposes.

#### CONCERNING THE REGISTRY OF BURIALS.

The deaths are ascertained by the number of burials. There are eighteen burial grounds in the city and suburbs, placed under the management of fourteen wardens. These officers, who attend every funeral, enter in a memorandum book, at the grave, the name, age, and designation of the person buried, along with the amount of fee received, and the name of the undertaker. Having taken these and other particulars, the wardens afterward enter the whole in a book classified conformably to a printed schedule drawn up by me. At the end of the year they furnish me with an abstract from their books, and it is from a combination of these abstracts that I ascertain the number of deaths at the various ages. The abstract includes still-born children, and the deaths of Jews and members of the Society of Friends, who have separate burying grounds.

About twenty years ago, when I first began to draw up the bills of mortality for this city, the causes of death were announced yearly in a newspaper, along with the gross number of burials; but as no confidence could be placed on such statements, I have since



that period declined to publish a list of diseases ; but being aware that if a correct list could be obtained at the census of 1831, when the population, births, marriages, and deaths were ascertained, it would be very beneficial, in a medical point of view, I addressed letters to 132 medical gentlemen in the city and suburbs, requesting that they would favour me with a return of the diseases of which their patients died, during the period in which I had requested the clergymen to give me a note of the number of baptisms. As I only succeeded with a small portion of the profession, the attempt became fruitless, and in all probability any future attempt will be unsuccessful, until a compulsory act of the legislature, regarding parochial registers for births, marriages, and deaths, be obtained.

#### CONCERNING THE GOVERNMENT ENUMERATION OF THE INHABITANTS OF GLASGOW.

Having been appointed to take the sole charge of conducting the enumeration and classification of the inhabitants of the City of Glasgow and suburbs, for the Government Census of 1831, I employed twelve parochial beadles, nineteen mercantile clerks, and one superintendent of police, to take the Lists. Before the books were prepared, an advertisement was inserted in all the Glasgow newspapers, requesting the inhabitants to favour me with their suggestions as to classification, and before the List takers commenced their operations, bills were posted upon the public places and dwelling houses of the City, informing the inhabitants of the nature of the inquiries and that they had no reference to taxes ; and, moreover, that non-compliance, or giving a false return, subjected them to a fine. When the books were returned to me, the public, through the medium of the press, were requested to call at an office appointed for the purpose, and to correct any omission or error which might have been made in their returns. The List takers having made oath before the Hon. Robert Dalglish, Lord Provost, that the names of every householder in the district assigned to them, his or her age, profession, religion, country, &c., had been faithfully enrolled in a book, and a minute description of his or her family taken down, I proceeded to classification, and formed tables and abstracts for each Parish, containing numerous details not required for the Government Digest.

#### THE FOLLOWING RESULTS ARE DERIVED FROM THE FOREGOING CENSUS.

Births—Males,	3527	Females,	3341	excess of Males,	186
Males under 5 years,	15422	Females,	14855	excess of Males,	567
Males under 10 years,	28549	Females,	27135	excess of Males,	1114
Males under 15 years,	39040	Females,	38155	excess of Males,	885
Males under 20 years,	47529	Females,	50411	excess of Females,	2882
Males under 30 years,	62706	Females,	73419	excess of Females,	10713
Males—entire Population,	93724	Females,	108702	excess of Females,	14978
Burials—Males	2701	Females,	2484	excess of Males,	217

#### GLASGOW BILL OF MORTALITY FOR 1830-1.

A General List of Births, Baptisms, Marriages, and Burials, within the Ten Parishes of the Royalty, and the Suburban Parishes of Barony and Gorbals.

## BIRTHS AND BAPTISMS.

	Males.	Females.	Total.
Returns from Clergymen and Lay Pastors, . . . . .	3281	3116	6397
Add still-born, . . . . .	246	225	471
Total, . . . . .	3527	3341	6868
Of this number there were registered only . . . . .	1678	1547	3225
Number unregistered exclusive of still-born, . . . . .	1603	1569	3172
The Children were baptized as follows :—			
By Clergymen of the Church of Scotland, . . . . .			3123
By do. of the Secession Church, . . . . .			664
By do. of the Relief Church, . . . . .			671
By do. of the Roman Catholic Church, . . . . .			915
By do. of the Scotch Episcopal Church, Independents, Methodists, and other denominations, including births among Baptists, Society of Friends, Jews, &c. . . . .			1024
Total, . . . . .			6397

## MARRIAGES.

Marriages engrossed in the Registers of the City, Barony and Gorbals:—In the City, 857—Barony, 691—Gorbals, 371—Total, 1919.

## BURIALS.

Burials engrossed in the Registers of the City, Barony and Gorbals Burying Grounds.  
Of whom have died.

	Males.	Females.	Total.		Males.	Females.	Total.
January, . . . . .	273	268	541	Still-born, . . . . .	246	225	471
February, . . . . .	226	223	449	Under one year, . . . . .	463	414	877
March, . . . . .	218	207	425	1 and under 2, . . . . .	316	307	623
April, . . . . .	208	184	392	2        5, . . . . .	263	237	500
May, . . . . .	185	175	360	5        10, . . . . .	134	119	253
June, . . . . .	200	178	378	10       20, . . . . .	144	122	276
July, . . . . .	194	182	376	20       30, . . . . .	189	145	334
August, . . . . .	232	206	438	30       40, . . . . .	169	144	313
September, . . . . .	240	229	469	40       50, . . . . .	184	164	348
October, . . . . .	236	184	420	50       60, . . . . .	177	175	352
November, . . . . .	234	189	423	60       70, . . . . .	168	171	339
December, . . . . .	255	259	514	70       75, . . . . .	109	102	211
	—	—	—	75       80, . . . . .	55	58	113
Total, . . . . .	2701	2484	5185	80       85, . . . . .	48	48	96
				85       90, . . . . .	24	26	50
				90       95, . . . . .	9	10	19
				95       100, . . . . .	3	6	9
				104       — . . . . .	0	1	1
				Total . . . . .	2701	2484	5185

Viz. :—In the Cathedral Church Yards, 1728—In the Crypt of the Cathedral, 3—In Blackfriars, St. David's, and North-West Burying Grounds, 204—In the Crypt of St. David's Church, 12—In St. Andrew's Episcopal Burying Ground, 4—In Culton do. 809—In Bridgeton do. 229—In Tolcross do. 192—In Shettleston do. 54—In Ander-

ston Old do. 125—In Cheapside Street do. 123—In Woodside Street, South and North, do. 268—In Crypt of Wellington Street Secession Church, 31—In Gorbals Burying Ground, 1403—Total, 5185.

AGES OF PERSONS IN GLASGOW AND IN THE SUBURBAN PARISHES OF BARONY AND GORBALS IN 1830-1.

Under 5.	5 to 10	10 to 15	15 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	90 to 100	100 and upw.	Total.
Males, 15,422	13127	10191	8489	15177	12179	8685	5549	3229	1090	260	26	1	93724
Females, 14,855	12580	10720	12256	23008	14240	9329	6099	3692	1502	385	32	4	108702
Total, 30,277	25707	21211	20745	38185	26419	18014	11648	6920	2592	645	58	5	202426

The following results have reference to Glasgow and its suburbs, which partake of a mercantile and manufacturing population, or something between Liverpool and Manchester, but more especially the latter, the town population being 198,518, and the rural, 3908.

In 1831, the population being 202,426, and the burials 5185, the rate of mortality is one out of every  $39\frac{4}{10}$  persons.\*

\* From a recent official return of the Population, Births, and Deaths in the Kingdom of the Netherlands, where the compulsory law is strictly enforced, and the return as perfect as any in Europe, it appears that the population was 6,166,854—births 207,388; viz., Males 106,481—Females 100,907. Deaths 158,800, viz., Males 81,742—Females 77,058. In drawing results from these data I find them remarkably similar to those of Glasgow; viz., in the Netherlands there is one birth for 29 73-100th persons, and one death for 38 83-100th persons. In Glasgow there is one birth for 29 47-100th, and one death for 39 4-100th persons.

From a careful perusal of the foregoing statements, it seems reasonable, that if in England the tables for Life Annuities are formed on data emanating from the mortality of 1 in  $36\frac{1}{2}$ , the data for Glasgow (if not for Scotland) should extend to 39 4-100.

That little credence can be given to the amount of mortality assigned for England and Wales, it is sufficient to say, that from the returns for the Census of 1831, the compiler of the Government Digest, in giving the averages for 10 years, ending in 1830, of the proportion of registered and unregistered burials to the population he had no alternative but to state, that in Pembrokeshire, it was one in 71 9-10ths of the population, in Anglesea, 70 6-10ths—in Monmouthshire, 62 2-10ths—while in Lancaster, it was only 45 1-10th—in Surrey, 47 7-10ths—in Northamptonshire, 50 4-10ths. For all England, 50 2-10ths—Wales, 63 3-10ths—and for England and Wales, 51. As the Parochial Registers in Scotland\* and Ireland, are not more correct than in England, it is evident, that until they are put on a better footing, the mortality of these countries cannot be ascertained with any degree of accuracy.

It appears from Malthus' Essay on the Principles of Population, Fifth Edition, page 55, that "the mortality in London, which includes so considerable a part of the inhabitants of this country, was, according to Dr. Price, at the time he made his calculations, (61 years ago) 1 in  $20\frac{1}{2}$ —in Norwich, 1 in  $24\frac{1}{2}$ —in Northampton, 1 in  $26\frac{1}{2}$ —in Newbury, 1 in  $27\frac{1}{2}$ —in Manchester, 1 in 28—in Liverpool, 1 in  $27\frac{1}{2}$ ." As Dr. Price must have taken his data from the London Bills, or others equally fallacious, it is evident that the above statements are totally inapplicable to the present time; the more so, when it is considered how much has been done of late years for the prolongation of human life.

\* It appears from a report of the committee of the Town Council of Edinburgh, of date 3d December 1833, that in that city the number of registered baptisms was only one in 115 of the population, or in other words little more than one-fourth of the births.

The Births being 6868, there is one birth for every  $29\frac{4}{100}$  persons.

The number of marriages being 1919, there are one marriage for every  $105\frac{4}{100}$  persons and  $3\frac{5}{100}$  births for each marriage.

The number of families being 41,965, there are  $4\frac{8}{100}$  for each family.

It is very satisfactory to know that with the same machinery in 1821, the population being 147,043, the burials 3686, the rate of mortality was one in  $39\frac{9}{100}$  persons, or in other words as near as may be to the mortality of 1831. If the number of births and amount of population could have been depended on, there is no doubt that between the years 1821, and 1831, similar results would have been obtained. This, however, cannot be got till 1841, at the next Government Census, unless a legislative compulsory system be introduced previous to that period.

While the foregoing results have reference to Glasgow and its suburbs only, it may be near the truth to assume them for Scotland. This opinion is pretty well supported by a table of the longevity of Scotland, which I prepared in 1821, and from a consideration of the climate. From the former it appeared that on an average of all the counties in Scotland, there was one person eighty years of age for every  $143\frac{9}{100}$  of the population, whilst in the county of Lanark, in which Glasgow is situated, with a population of 316,790, including 263,046, who live in towns, viz., in Glasgow 202,426, and in other towns 60,620, there was one such person for every  $169\frac{7}{100}$ , showing a degree of health in the population of Glasgow, nearly equal to that of the whole of Scotland. The state of the climate was exhibited by the late Right Honourable Sir John Sinclair, Bart., the father of British Statists, and a citizen of the world, whose memory will be ever cherished and held in remembrance by all those who have the good of their country and the happiness of mankind at heart. Sir John says, "The two seas by which Scotland is bounded, in consequence of their difference of temperature, have a remarkable effect on its climate. The German Ocean which stretches along the east coast, being of small extent and of no considerable depth, is easily affected by the changes of the seasons on the adjacent continent, insomuch that it is three degrees colder in winter, and five degrees warmer in summer than the Atlantic, which without any material interruption, occupies the western coast of the kingdom. In summer, therefore, in consequence of the high comparative temperature of the German Ocean, a copious evaporation takes place, throughout its whole extent, which produces those easterly *haars* as they are called or thick mists which are seen at a certain period of the day to arise from the sea, and which are not only dangerous to navigation, but advancing upon the land, render the eastern coast often highly disagreeable."

The importance of authentic Bills of Mortality is acknowledged by all who have made political science their study. That the Bills I have from time to time prepared for Glasgow may be considered authentic, I have thought it right to annex eight out of numerous testimonials from persons eminent for their knowledge in political economy, in favour of the Bill for 1831.

JOSHUA MILNE, ESQ., THE DISTINGUISHED ACTUARY TO THE SUN LIFE OFFICE, LONDON,  
AUTHOR OF A TREATISE ON ANNUITIES, THE LAW OF MORTALITY, AND OTHER  
WORKS OF SIMILAR IMPORT,

Says, "From the materials you have collected with so much labour and care, in the city and suburbs of Glasgow, the law of mortality in a large manufacturing town may now be determined, though it could not heretofore for want of the necessary data. From these, curious and interesting results may be deduced, but valuable as they now are, they will become much more so, when they can be compared with others derived from observations



made in a similar manner, and on a large scale, under different circumstances. Except in the single instance of Stockholm, seventy years ago, an extreme case, ill adapted to the purpose, I am not aware that any such documents have been published, though great advances have been made, in preparing them at Philadelphia, in North America, and your laudable example is well calculated to produce them by exciting others to undertake the task."

MONS. JEAN BAPTISTE SAY, THE ADAM SMITH OF FRANCE,

In reviewing my folio work (in which the Glasgow Bill of Mortality for 1831 is engrossed) in vol. 21st of the second series of the *Revue Encyclopedique, Paris*, says, "The Germans, so famous for their statistics, are now surpassed by the Scotch, for the extent and scrupulous exactness of their details. We have before us a Statistical Account of the City of Glasgow, the facts of which have been drawn together and arranged by Mr. Cleland, Superintendent of Public Works: it is a *chef d'œuvre*."

"Of all the notices that can be collected about a country, the most important are those which have relation to its population, because it is from these that the greatest number of conclusions can be drawn relative to the condition of men, and it is this that interests us above all. For example—Is the number of persons increasing?—We may be certain that the general productions of the country have increased also. Is the mean duration of life prolonged?—It is evident that the art of living has been improved, that the population are better fed, that they conduct themselves with greater propriety, that they inhabit more wholesome lodgings, or that they are better taken care of in infancy, in old age, and when they are sick; in a word, that they are happier."

"We think Mr. Cleland's last enumeration the best made; not being able to analyze the numerous tables, we will confine ourselves to those which can be compared with some of the results of the Statistical Tables, lately published by Mons. the Prefect of the Seine. From Mr. Cleland's statements, results may be drawn very interesting to the political economist, in as much as reliance can be placed on their accuracy, and as they are frequently renewed. In France we reason from old data."

THE CELEBRATED GERMAN PROFESSOR FRIEDLAENDER OF THE SYNDICUS  
UNIVERSITY, V.D. BORG.

In reviewing the work, in the *Dorpat Annuals*, he remarks, "If every one who engages in collecting Statistical information, would take the same views of it as our author does, that Statistics ought only to be the estimate of the present state of a country, in reference to its future improvement, and that it should be the writer's principal business, by the most careful examination of all the moral and physical resources of the country, to collect matter of facts, in the consideration of which, the philosopher and statesman may discover laws for the welfare of the people; statistical works must then be more frequent, which should rise above local details and local views, up to a general standard, to which the science is indebted for its dignity and high interest, and that justified the London Statistical Society, in giving the motto to their Instructive Tables, 'every line a moral, every page a history.' But although the greater part of the work before us has reference to a small part of Scotland only, and in proportion communicates but little information in regard to Great Britain, still it contains such invaluable materials of political economy, and endeavours with so much solidity and spirit, to illustrate many of the economical circumstances of the most industrious commercial county in Scotland, which had been greatly neglected, as too difficult to explain; that it therefore becomes a duty to pay

attention to it in this periodical, which is designed to notice the principal works of foreigners. But it also deserves this attention, on account of the unexampled and exemplary accuracy exhibited in collecting and arranging the valuable details."

SIR HENRY HALFORD, BART. M. D., PRESIDENT OF THE COLLEGE OF PHYSICIANS,  
LONDON.

In a letter to me Sir Henry says, "I have been much impressed by the accuracy of your detail of the Mortality of Glasgow, as you have shown it in the Bill for 1831. The Duke of Montrose thinking that such a document would interest me, was so obliging as to send it to me.

"Your work is highly valuable, and I have mentioned it to some high official characters as appearing to me to be worthy of their regard, and proper to be imitated in England. I shall lose no time in laying it on the table of the College of Physicians. As I dare say it will be satisfactory to you to know how your care has been appreciated, I write you this letter."

#### FROM THE GOVERNMENT DIGEST OF THE ENUMERATION.

"It would be unjust not to mention in this place, that Mr. Cleland has transmitted printed documents containing very numerous and very useful statistical details concerning the city and suburbs of Glasgow, and that the example has produced imitation in some other of the principal towns of Scotland, though not to the same extent of minute investigation by which Mr. Cleland's labours are distinguished."

#### THE EDINBURGH REVIEW

Observes, that "This book is the production of one of the citizens of Glasgow, and contains a great body of useful and curious information. Nothing indeed can be more interesting than an enlightened and comprehensive account of such an assemblage of human beings, as are to be now found in the second-rate towns of our empire, and when one thinks of the mighty influence of cities, whether as organs of political sentiment or the engines of political disturbance, when one regards the economy of their trade, and sees in living operation what that is which originates its many and increasing fluctuations, one cannot but look on the authentic memorials of such facts as are presented to our notice in this volume, with the same sense of their utility as we do on the rudiments of an important science, or on the first solid materials of any deeply interesting speculation.

"Such works as those of Mr. Cleland's are of great value, and are well fitted to pioneer the way of the economist to a sound and experimental conclusion on questions of great interest. We should like to see similar productions from Manchester and other great towns."

SIR DANIEL K. SANDFORD, PROFESSOR OF GREEK IN THE UNIVERSITY OF GLASGOW,  
LATE MEMBER OF PARLIAMENT FOR PAISLEY.

In a letter to me, Sir Daniel says, "I can honestly express my admiration of your Statistical Work and Mortality Bill for 1831. The uncommon labour and patient thought which you must have bestowed on this publication will be rewarded, not only by a still farther increase of your own reputation, but by that which I believe you will value yet more, an addition to the fame of Glasgow, already so high, as the chief source and centre of statistical knowledge."

## THE SOCIETY FOR THE DIFFUSION OF USEFUL KNOWLEDGE, LONDON,

State, in the Penny Magazine for October, 1835, "that they are largely indebted to Dr. Cleland's admirable work" making use of the second edition, 1831. "It is quite safe to say that the internal condition of no city in the world, has ever been so completely illustrated as that of Glasgow has been through the long continued and arduous exertions of this gentleman, whose example we earnestly hope that influential persons in our other principal towns will be stirred up to imitate."

Besides these testimonials, there are others from the Right Hon. Sir John Sinclair; the Rev. Dr. Chalmers, Professor of Divinity in the University of Edinburgh; Mons. Orrondy, Prefect of the Department of the Seine; the Very Rev. Dr. Macfarlan, Principal of the University of Glasgow; Sir James M'Gregor, Bart., M.D., Director General of the Medical Department of the Army; the Very Rev. Dr. MacGill, Professor of Divinity in the University of Glasgow, one of the Deans of the Chapel Royal; His Grace the Duke of Hamilton and Brandon, Lord Lieutenant of the County of Lanark; the Society of Antiquaries of Scotland; the Right Hon. David Boyle, Lord Justice Clerk; the Hon. Lord Cockburn, one of the Senators of the College of Justice; Baron von Schielden, Lord Treasurer to the King of Prussia; the Right Rev. Dr. Brinkley Bishop of Cloyne, late Astronomer Royal, Ireland; Dr. Spiker, Librarian to the King of Prussia; and Mons. Bailley, the Inspector-General of Finance of France.

It does not appear that Mr. Finlaison, the distinguished Actuary of the National Debt Office, knew of the Glasgow Bills of Mortality and Statistical Tables published in 1831, when he gave his evidence before a Committee of Parliament in 1833, otherwise it is probable he would not have felt it necessary to have drawn results for England from a small town, in a foreign country, containing only about 11,000 souls, which he might have ascertained from an average population of upwards of 200,000, at home, whose avocations were all narrated in the Government census. The more so, as it appears from the abstract of his evidence, p. 6, that all the essential details recommended by him for the formation of tables "sufficient enough for an observation on the duration of life," have been embraced in the Glasgow Bills.

The publication of the foregoing testimonials in favour of the Glasgow Bills of Mortality, which to some may appear superfluous, have become necessary, from the circumstance of my retiring from public office, and being no longer responsible for the Glasgow Bills of Mortality. In making this avowal I may be permitted to express the high gratification I feel in receiving the testimony of so many eminent men, and which I consider a high reward for twenty years gratuitous services, in investigating and detailing the principles on which Mortality Bills should be prepared, so as to enable the political economist to draw results relative to the duration of life.

JAMES CLELAND.

130, UPPER NILE STREET, }  
Glasgow, 15th January, 1836 }

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CHOLERA MORBUS IN GLASGOW.

An abstract of "Conspectus of Cholera in Glasgow," drawn up by JAMES CLELAND, LL.D., member of the Board of Health, and JAMES CORKINDALE, M.D. L.L.B., medical secretary to the Board of Health, now president of the Faculty of Physicians and Surgeons in Glasgow, is here given as an appropriate Appendix to the Glasgow Bills of Mortality.

The first eruption commenced on 19th February, and the last terminated on 11th November, 1832.

During that period there were 6,208 cases; 2005 deaths; and 3,203 recoveries, entered on the records of the Board of Health.

TABLE

*Shewing the age, sex, and number of persons, who died of Cholera, and were buried in the Burying-grounds of the City and Sub-urban Parishes of Burony and Gorbals. The list includes 161 persons who died without, but were buried within, the bounds of the Board of Health.*

		Males.	Females.	Total.
Under 1 year,		10	8	18
1 and under	2,	15	14	29
2	...	5,	43	83
5	...	10,	56	106
10	...	20,	71	132
20	...	30,	222	358
30	...	40,	291	529
40	...	50,	355	639
50	...	60,	293	556
60	...	70,	237	444
70	...	75,	91	155
75	...	80,	37	62
80	...	85,	24	44
85	...	90,	2	11

Total,	1,419	1,747	3,166
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TABLE

*Exhibiting the amount of Deaths by Cholera, and Burials monthly, which includes those who died without the bounds.*

	Deaths from the Records of the Board of Health.	Burials from the Books of the Churchyard wardens.
February,	86	87
March,	256	264
April,	220	229
May,	119	125
June,	191	196
July,	435	411
August,	1,113	1,222
September,	231	243
October,	328	334
November,	23	25
	<hr/> 3,005	<hr/> 3,166

It being desirable, in a medical and statistical point of view, to ascertain the number of burials during the existence of the Cholera, as compared with the corresponding period in the preceding year. The following is the result:—

Burials from 12th February to 11th November, 1832, including persons who died of Cholera,	8124
Deduct those who died of Cholera,	3166

Burials from 12th February to 11th November, 1831,	4959
	4862

Increase of Burials during the above period, independent of deaths by Cholera,	96
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There were three eruptions of Cholera marked by the reduced number of cases, happening about the 3d of June, the 16th of September, and the 11th of November. Each eruption had a period of increase and also of gradual decrease. In the first eruption, persons poorly fed, of irregular habits, and dwelling in the crowded ill-aired parts of the city were chiefly affected. The second eruption was more severe; the attacks were more spread over the town, and many healthy persons and in easy circumstances fell victims to the disease. The last eruption was milder than the second, but still surpassed the first both in the number of cases and in the healthy and good condition of many of the sufferers.

The total number of cases being 6208, there was one case for every 3260-100th of the population—one death for every 67 36-100th, and the progress of the disease was such as to have seized one victim for every *six* and *three-fourths*, and to have occasioned one death for within a small fraction of every *fourteen* families.

#### OFFICE BEARERS OF THE BOARD OF HEALTH.

The Honourable ROBERT DALGLISH, Lord Provost, Chairman.

Robert Strang, Esq., Secretary.

John Alston, Esq., Treasurer.

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DR. JOHN BURNS, F.R.S., Professor of Surgery in the University, Convener.

Henry Marshall, Esq., Deputy Inspector General of Hospitals.

Dr. James Corkindale, LL.B., Surgeon to the City Corporation. } Joint Medical Secretaries.

The General Report concluded with the following remarks:—"The Members of the Board of Health in its various departments, lay and medical, are entitled to the warmest thanks of the community. Their assiduous, uninterrupted, and daily labours, have, under the kind direction of Providence, been the means of mitigating the distress, and saving the lives of many of their unfortunate fellow-citizens. To Provost Dalglish, Chairman of the Board, the community lies under deep and lasting obligations. The name of that gentleman has long been associated with every thing that is benevolent and humane; but high as his claims to the gratitude of his fellow-citizens have been on former occasions, they are now greatly increased."



